What is claimed is:

1. An isolated DNA molecule comprising a DNA sequence encoding a polypeptide with a first amino acid sequence selected from the group consisting of the amino acid sequences of the polypeptides MTSP1, MTSP2, MTSP3, MTSP4, MTSP5, MTSP6, MTSP7, MTSP8, MTSP9, MTSP10, MTSP11, MTSP12, MTSP13, MTSP14, MTSP15, MTSP16, MTSP17, MTSP18, MTSP19, MTSP20, MTSP21, MTSP22, MTSP23, MTSP24, MTSP25, MTSP26, MTSP27, MTSP28, MTSP29, MTSP30, MTSP31, MTSP32, MTSP33, MTSP34, MTSP35, MTSP36, MTSP37, MTSP38, MTSP39, MTSP40, MTSP41, MTSP42, MTSP43, MTSP44, MTSP45, MTSP46, and MTSP47 as depicted in Fig. 1,

or a second amino acid sequence identical to said first amino acid sequence but with conservative substitutions,

wherein said polypeptide has *Mycobacterium tuberculosis* specific antigenic and immunogenic properties.

2. An isolated portion of the DNA molecule of claim 1, said portion encoding a segment of said polypeptide shorter than the full-length polypeptide, said segment having *Mycobacterium tuberculosis* specific antigenic and immunogenic properties.

3. A vector comprising:

(a) the DNA molecule of claim 1; and

(b) transcriptional and translational regulatory sequences operationally linked to said DNA sequence, said regulatory sequences allowing for expression of the polypeptide encoded by said DNA sequence in a cell.

4. A vector comprising:

(a) the DNA molecule of claim 2; and

(b) transcriptional and translational regulatory sequences operationally linked to said DNA sequence, said regulatory sequences allowing for expression of the polypeptide encoded by said DNA sequence in a cell.

5. A cell transformed with the vector of claim 3.

6. A cell transformed with the vector of claim 4.

7. A composition comprising the vector of claim 3 and a pharmaceutically acceptable diluent or filler.

8. A composition comprising the vector of claim 4 and a pharmaceutically acceptable diluent or filler.

9. A composition for use as a DNA vaccine, said composition comprising at least two DNA sequences, each encoding a polypeptide of the *Mycobacterium tuberculosis* complex or a functional segment thereof, said DNA sequences being operationally linked to transcriptional and translational regulatory sequences which allow for expression of each said polypeptide in a cell of a vertebrate,

wherein at least one of said DNA sequences is the sequence of claim 1.

10. A composition for use as a DNA vaccine, said composition comprising at least two DNA sequences, each encoding a polypeptide of the *Mycobacterium tuberculosis* complex or a functional segment thereof, said DNA sequences being operationally linked to transcriptional and translational regulatory sequences which allow for expression of each said polypeptide in a cell of a vertebrate,

wherein at least one of said DNA sequences is the sequence of claim 2.

11. An isolated polypeptide with a first amino acid sequence selected from the group consisting of the sequences of the polypeptides MTSP1, MTSP2, MTSP3, MTSP4, MTSP5, MTSP6, MTSP7, MTSP8, MTSP9, MTSP10, MTSP11, MTSP12, MTSP13, MTSP14, MTSP15, MTSP16, MTSP17, MTSP18, MTSP19, MTSP20, MTSP21, MTSP22, MTSP23, MTSP24, MTSP25, MTSP26, MTSP27, MTSP28, MTSP29, MTSP30, MTSP31, MTSP32, MTSP33, MTSP34, MTSP35, MTSP36, MTSP37, MTSP38, MTSP39, MTSP40, MTSP41, MTSP42, MTSP43, MTSP44, mtsp45, mtsp46, and MTSP47 as depicted in Fig. 1,

or a second amino acid sequence identical to said first amino acid sequence but with conservative substitutions,

wherein said polypeptide has *Mycobacterium tuberculosis* specific antigenic and immunogenic properties.

12. An isolated segment of the polypeptide of claim 11, said segment being shorter than the full-length polypeptide and having *Mycobacterium tuberculosis* specific antigenic and immunogenic properties.

13. A composition comprising the polypeptide of claim 11, or a functional segment thereof, and a pharmaceutically acceptable diluent or filler.

14. A composition comprising the polypeptide of claim 12, or a functional segment thereof, and a pharmaceutically acceptable diluent or filler.

15. A composition comprising at least two polypeptides of the *Mycobacterium tuberculosis* complex, or functional segments thereof, wherein at least one of said at least two polypeptides is the sequence of claim 1.

16. A composition comprising at least two polypeptides of the *Mycobacterium tuberculosis* complex, or functional segments thereof, wherein at least one of said at least polypeptides is the segment of claim 2.

17. A method of diagnosis comprising:

(a) administration of the composition of claim 13 to a subject suspected of having or being susceptible to *Mycobacterium tuberculosis* infection; and

(b) detecting an immune response in said subject to said composition, as an indication that said subject has or is susceptible to *Mycobacterium tuberculosis* infection.

18. A method of diagnosis comprising:

(a) administration of the composition of claim 14 to a subject suspected of having or being susceptible to *Mycobacterium tuberculosis* infection; and

(b) detecting an immune response in said subject to said composition, as an indication that said subject has or is susceptible to *Mycobacterium tuberculosis* infection.

19. A method of diagnosis comprising:

(a) administration of the composition of claim 15 to a subject suspected of having or being susceptible to *Mycobacterium tuberculosis* infection; and

(b) detecting an immune response in said subject to said composition as an indication that said subject has or is susceptible to *Mycobacterium tuberculosis* infection.

20. A method of diagnosis comprising:

(a) administration of the composition of claim 16 to a subject suspected of having or being susceptible to *Mycobacterium tuberculosis* infection; and

(b) detecting an immune response in said subject to said composition as an indication that said subject has or is susceptible to *Mycobacterium tuberculosis* infection.

21. A method of diagnosis comprising:

(a) providing a population of cells comprising CD4 T lymphocytes from a subject;

(b) providing a population of cells comprising antigen presenting cells (APC) expressing a major histocompatibility complex (MHC) class II molecule expressed by said subject;

(c) contacting the CD4 lymphocytes of (a) with the APC of (b) in the presence of the polypeptide of claim 1; and

(d) determining the ability of said CD4 lymphocytes to respond to said polypeptide, as an indication that said subject has or is susceptible to *Mycobacterium tuberculosis* infection.

22. A method of diagnosis comprising:

(a) providing a population of cells comprising CD4 T lymphocytes from a subject;

(b) providing a population of cells comprising antigen presenting cells (APC) expressing at least one major histocompatibility complex (MHC) class II molecule expressed by said subject;

(c) contacting the CD4 lymphocytes of (a) with the APC of (b) in the presence of the segment of claim 2; and

(d) determining the ability of said CD4 lymphocytes to respond to said polypeptide, as an indication that said subject has or is susceptible to *Mycobacterium tuberculosis* infection.

23. A method of diagnosis comprising:

(a) providing a population of cells comprising CD4 T lymphocytes from a subject;

(b) providing a population of cells comprising antigen presenting cells (APC) expressing at least one major histocompatibility complex (MHC) class II molecule expressed by said subject;

(c) contacting the CD4 lymphocytes of (a) with the APC of (b) in the presence of the composition of claim 15; and

(d) determining the ability of said CD4 lymphocytes to respond to said polypeptide, as an indication that said subject has or is susceptible to *Mycobacterium tuberculosis* infection.

24. A method of diagnosis comprising:

(a) providing a population of cells comprising CD4 T lymphocytes from a subject;

(b) providing a population of cells comprising antigen presenting cells (APC) expressing at least one major histocompatibility complex (MHC) class II molecule expressed by said subject;

(c) contacting the CD4 lymphocytes of (a) with the APC of (b) in the presence of the composition of claim 16; and

(d) determining the ability of said CD4 lymphocytes to respond to said polypeptide, as an indication that said subject has or is susceptible to *Mycobacterium tuberculosis* infection.

25. A method of diagnosis comprising:

(a) contacting the polypeptide of claim 11 with a bodily fluid of a subject;

(b) detecting the presence of binding of antibody to said polypeptide, as an indication that said subject has or is susceptible to *Mycobacterium tuberculosis* infection.

26. A method of diagnosis comprising:

(a) contacting the segment of claim 12 with a bodily fluid of a subject;

(b) detecting the presence of binding of antibody to said polypeptide, as an indication that said subject has or is susceptible to *Mycobacterium tuberculosis* infection.

27. A method of diagnosis comprising:

(a) contacting the composition of claim 15 with a bodily fluid of a subject;

(b) detecting the presence of binding of antibody to said composition, as an indication that said subject has or is susceptible to *Mycobacterium tuberculosis* infection.

28. A method of diagnosis comprising:

(a) contacting the composition of claim 16 with a bodily fluid of a subject;

(b) detecting the presence of binding of antibody to said composition, as an indication that said subject has or is susceptible to *Mycobacterium tuberculosis* infection.

29. A method of vaccination comprising administration of the composition of claim 7 to a subject.

30. A method of vaccination comprising administration of the composition of claim 8 to a subject.

31. A method of vaccination comprising administration of the composition of claim 9 to a subject.

32. A method of vaccination comprising administration of the composition of claim 10 to a subject.

33. A method of vaccination comprising administration of the composition of claim 13 to a subject.

34. A method of vaccination comprising administration of the composition of claim 14 to a subject.

35. A method of vaccination comprising administration of the composition of claim 15 to a subject.

36. A method of vaccination comprising administration of the composition of claim 16 to a subject.